## SCIENTIFIC NOTE

**Further Observations on Trapping Male *Pleocoma* with Female-Baited Traps (Coleoptera: Scarabaeidae).**[1]—Zwick and Peifer (1965, Pan-Pac. Entomol., 41(2): 118–120) reported the attraction of *Pleocoma minor* Linsley males to traps baited with *P. minor* females. They suspected that a sex pheromone was produced by the females. In view of their work, and the current entomological interest in sex attractants, this brief paper reports two instances where other species of male *Pleocoma* were drawn to traps baited with *Pleocoma* females.

In conjunction with a study of the distribution of *Pleocoma* in Oregon, traps baited with live females were set in the soil at two locations in western Oregon in 1960 and 1961. Each trap was constructed as follows: The top was cut out of an ordinary tin can about the size of a 2-pound coffee can. The female was placed on an inch or two of soil in the bottom of the can. A funnel was placed on the can in such a way that the funnel rim could be attached to the top of the can and the funnel spout would be about 2 inches above the soil in the bottom of the can. The trap was then set in the ground so that the funnel rim and the top of the can were level with the surface of the soil.

On 31 October 1960, eight such traps were set out in McDonald Forest, 5 miles north of Corvallis. Traps number 1–4 each were baited with a freshly dug female of *P. dubitalis dubitalis* Davis, the species commonly found in this area. It is not known whether the females were virgin or inseminated. No females were placed in traps number 5–8. During the next 11 days, four males were attracted to two of the baited traps; one male entered trap number 2 and three males entered trap number 4. No males entered traps number 5–8. Something, probably a skunk or other predator, had ripped the funnels from traps number 1 and 3 and devoured all but the elytra of the females which had been placed therein.

It is of interest that three males were attracted to a single female in trap number 4. In soil burrows, Ritcher and Beer (1956, Pan-Pac. Entomol., 32(4): 181–184) observed two or three *P. dubitalis dubitalis* males attracted to a single female. Ellertson (1956, J. Econ. Entomol., 49(3): 431) found as many as seven to nine *P. oregonensis* males burrowing down to a single female with two or more males being crushed in the process. Ellertson and Ritcher (1959, Oregon Agr. Exp. Sta. Tech. Bull., No. 44, 42 pp.) found females of *P. minor*, *P. crinita*, and *P. oregonensis* to copulate with more than one male in the laboratory. These data may indicate that the attractant produced by female *Pleocoma*, be it a sex pheromone or some other mechanism, is secreted even after the arrival of the first male. On the other hand, the attractant may be secreted only once but deposited, partially at least, on the substrate. In this case it could remain attractive for some time.

In late October 1961, three traps, each baited with one *P. dubitalis dubitalis* female, were placed in the soil along Highway No. 99 near Stage Road Pass at an elevation of 1,830 feet, about 3 miles north of Wolf Creek in Josephine County. This area is within the general distribution occupied by *P. simi* although the closest known *P. simi* site is about 25 miles to the south near Grants Pass.

The traps were examined in late November 1961. All three traps were still intact, but something had entered the traps and eaten all but the elytra of the fe-

[1] Supported by the Oregon Agricultural Experiment Station and National Science Foundation Grant No. G-17935.

males. In trap number 3, however, in addition to the elytra of the *P. dubitalis dubitalis* female, the elytra and metathoracic wings of a *P. simi* adult male were found. In this case, then, the male probably was attracted by the female prior to the entry of the predator which then devoured both beetles.

In view of the observations reported here, it may be noted that if the attractive mechanism drawing *P. minor* males to *P. minor* females is the production of a female sex pheromone, as speculated by Zwick and Peifer (1965), such a pheromone probably is produced also by *P. dubitalis dubitalis* females. Moreover, since in at least one case a *P. simi* male was attracted to a *P. dubitalis* female, the attractant may not be species-specific.—DAVID G. FELLIN,[2] *Department of Entomology, Oregon State University, Corvallis.*

[2] Presently Research Forest Entomologist, Intermountain Forest and Range Experiment Station, Forestry Sciences Laboratory, Missoula, Montana.

***Tyrophagus putrescentiae* and *Megaselia scalaris* Infesting Laboratory Cultures of Sciomyzid Flies**[1] (ACARI: ACARIDAE; DIPTERA: PHORIDAE AND SCIOMYZIDAE).—The rearings of Sciomyzidae with terrestrial larvae at the limnological laboratory of the Department of Entomology, Cornell University, Ithaca, N. Y. were infested by the acarid mite *Tyrophagus putrescentiae* (Schrank) and by the phorid fly *Megaselia* (*Megaselia*) *scalaris* (Loew) on several occasions.

The sciomyzid flies were kept in breeding jars constructed by placing a bottomless jar about 7 cm high and 5 cm in diameter in a plastic Petri dish of slightly larger diameter, containing a layer of compressed, slightly moistened, peat moss. The jar was covered with nylon cloth fixed with two rubber bands. A narrow margin of the peat moss layer was thus exposed to organisms outside the breeding jar. The food for adult flies, i.e. a mixture of honey, brewer's yeast, and dried milk, and also both crushed and living aquatic snails were put into each breeding jar.

*Tyrophagus putrescentiae* probably penetrated into the breeding jars both through the nylon cloth and the exposed peat moss, but there is no positive evidence of either of these two modes of entry. The mites were feeding on dry snail tissue, on an organic layer covering snail shells (remnants of organic deposits, microorganisms living in and on these deposits, and perhaps also periostracum), on dry fly food, and particularly on sciomyzid eggs. Because of the latter habit, they are not only a nuisance but serious pests in laboratory cultures.

The infestation of *Megaselia scalaris* was initiated by females penetrating into the jar through the cloth and laying eggs inside the jar, and very probably also by oviposition into that peat moss exposed outside which was soaked with fly food. The larvae were feeding both on dead snails (either previously killed by sciomyzid larvae or having died of drought) and fly food resting on, or mixed with, peat moss. No killing of snails by phorid larvae was positively ascertained. Occasionally, phorid larvae were observed to feed on sciomyzid adults that had died recently. The damage caused by Phoridae, if any, was only indirect. The phorid and sciomyzid larvae perhaps had to compete for food or space.

[1] A by-product of studies supported by research grants AI-05923, from the National Institute of Allergy and Infectious Diseases, U. S. Public Health Service, and GB-5452, from the Program of Environmental Biology, National Science Foundation.